DISCLOSURE TEXT:

-        By treating a quartz surface on a silicon wafer with a brief
    exposure to a dilute solution of buffered hydrofluoric acid, the
    surface is modified. The treatment improves the adhesion of a
    photoresist coating needed for further processing steps. Poor
    adhesion of the photoresist coating on quartz deposited on silicon
    wafers can be a yield detractor. The normal preparation process is to
    first preclean the wafer with a combination of solutions and then
    bake the wafer dry. The preclean step is then followed by an adhesion
    promoter, such as a silazane, prior to application of the photoresist
    coating. The improved process adds a hydrofluoric acid treatment
    after the precleaning step and prior to the application of the
    adhesion promoter.
     Experiments show that dipping the wafer for 15
    seconds in a solution of buffered hydrofluoric acid solution diluted

by water in the ratio one part acid to five parts water
is
sufficient. After the acid treatment, the surface wets
all over in
contrast to the droplets formed on an untreated
surface. It is
believed that the treatment forms active hydroxyl sites
on the quartz
surface of the wafer which react with the silazane
adhesion promoter
to improve the bonding to the surface.